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We claim:

1. A polyamide which contains a monoolefinically unsaturated monocarboxylic acid of the formula $\text{CH}_2 = \text{CH}-(\text{CH}_2)_3\text{-COOH}$ chemically bonded at the end of the polymer chain via an amide group.
2. A polyamide as claimed in claim 1, where the content of the monoolefinically unsaturated monocarboxylic acid of the formula $\text{CH}_2 = \text{CH}-(\text{CH}_2)_3\text{-COOH}$ is in the range from 0.001 to 2 mol%, based on 1 mole of amide groups of the polyamide.
3. A polyamide obtainable by crosslinking a polyamide as claimed in claim 1.
4. A process for preparing a polyamide, which comprises carrying out the reaction of monomers suitable for forming a polyamide to give a polyamide in the presence of a monoolefinically unsaturated monocarboxylic acid of the formula $\text{CH}_2 = \text{CH}-(\text{CH}_2)_3\text{-COOH}$.
5. A process for preparing a polyamide, which comprises carrying out the reaction of oligomers suitable for forming a polyamide to give a polyamide in the presence of a monoolefinically unsaturated monocarboxylic acid of the formula $\text{CH}_2 = \text{CH}-(\text{CH}_2)_3\text{-COOH}$.
6. A fiber, a film, or a molding, comprising a polyamide as claimed in claim 1 or 2.

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